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5. Replace paragraph [0045] with one replacement paragraph:

[0045] The air outlet 11 is preferably positioned on the top of the housing 8 so that the sterilized discharging air can easily goes into the air distribution duct (not shown) that leads to every rooms in a building, or into air exhaust pipe(s) (not shown) to the air outside. Between the sterilizing chamber and the outlet, there is an outlet filter unit 13. The purpose of this filter is to prevent particles from getting into the air distribution duct. So, the outlet filter unit 13 can be designed according to the requirements of applications, from ~~normal~~ HVAC filters to HEPA/ULPA filters, preferably HEPA filters for most of the applications. ~~The outlet filter unit is also comprised of a catalytic filter to convert ozone into oxygen.~~ On the outlet 11, there is an inspection window 12 for taking air samples for live microorganism's inspection to supervise sterilizing effect and air quality.

6. Replace paragraph [0046] with one replacement paragraph:

[0046] In the sterilizing chamber 10, which is constructed basically by the six sides of the housing 8 and internally as continually circuitous tunnel by interior walls, there is always a curved (circular) flow guiding interior 7 to make a smooth roundabout wherever the air flow turns its direction in the chamber 10 to reduce flow resistance. The interior surfaces 9 of the sterilizing chamber 10 is made with anti-ultraviolet, light reflecting material with mirror surface to increase the interior reflection and thus increase the UV sterilizing effect. The length of the tunnel and/or the number of roundabouts of the chamber 10 can be reduced or increased according with the number of UV lamps to be installed. The opening size of the sterilizing chamber 10 is mainly decided by the volume of air to be sterilized. Normal sizes include, but not limit to, 1'X1', 1'X2', 2'X2', 2'X3', 3'X3', 3'X4', 4'X4'.

7. Replace paragraph [0048] with one replacement paragraph:

[0048] The fundamental difference of this invention from prior art methods and apparatus that were thought having the ability to kill all of microorganisms with only one, two or three UV lamps in a wink is the UV radiation ~~expocure~~ intensity. The basic formula is that the amount ~~product (UV radiation value)~~ of UV power multiplying exposure time must be higher than the UV death value of any microorganisms. In other words, the sterilizing dosage of UV radiation should be high enough so that there will not be any microorganism survived.

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Amendments to claims

Claims

1. (Currently amended) A Method for sterilizing fluent material (air or gas) in large volume (300cfm to 30,000 cfm) by intensive radiation of 253.7nm wavelength ultraviolet rays, said method comprising the steps of: (a) - guiding and/or forcing fluent material through filter(s) to remove large particles (1um to 10um); (b) using circuitous sterilizing chamber(s) internally constructed as continually circuitous tunnel(s), with such as roundabout ~~path(s), or spiral path(s), or sinuous path(s), or zigzag~~ tunnel(s), ~~path(s), or other similar shapes of paths~~ to contain said fluent material; (c) employing intense 253.7nm wavelength UV irradiation to kill all live microorganisms in said fluent material passing through said chamber(s); ~~(d) converting ozone in air into oxygen when dealing with air;~~ (e) discharging sterilized fluent material out of said chamber(s).

2. (Currently amended) Apparatus for sterilizing fluent material (air or gas) in large volume (300cfm to 30,000 cfm) by radiation of 253.7nm wavelength ultraviolet rays, said apparatus comprising: (a) an inlet 1 guiding in fluent material for sterilizing; (b) a power unit 2 positioned in said inlet 1; (c) an inlet filter 3 connected with said inlet 1 to remove fairly large particles (1um to 10um) from said fluent material; (d) a circuitous sterilizing chamber 10 connected with said inlet filter unit 3; (e) a group of 253.7nm wavelength UV light tubes 15 positioned, along with the flow direction, inside said chamber 10 providing high-density ultraviolet radiation to irradiate passing said fluent material; (f) connected with said chamber 10, an optional outlet filter unit 13 to remove any particles larger than the requirements of applications (0.3um to 5um); ~~(g) a catalytic filter comprised in said outlet filter unit 3 to convert ozone into oxygen;~~ (h) an inspection window or sample faucet 12 for taking testing samples; (I) an outlet 11 extending from said outlet filter 13 to discharge sterilized fluent material.

3. (Currently amended) The apparatus of claim 2 wherein said circuitous sterilizing chamber 10 ~~may~~ constructed internally by interior walls as continually circuitous tunnel(s), such as ~~form roundabout path(s), or spiral path(s), or sinuous path(s), or zigzag~~ tunnel(s), ~~path(s) or other similar shapes of paths~~ for the purpose of increasing UV exposure.

4. (Currently amended) The apparatus of claim 2 wherein said chamber 10 is constructed with smooth curved flow guiding interior 7 at every turning section to form flow low flow resistant chamber.

5. (Currently amended) The apparatus of claim 2 wherein said chamber 10 has had polished internal ~~reflecting~~ mirror surfaces 9 to increase UV killing power effect.

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6. (Original) The apparatus of claim 2 comprises UV visual inspection window(s) 5 in every section of said chamber 10.

7. (Original) The apparatus of claim 2 further comprises UV sensor(s) 6 in every section of said chamber 10 as autofeedback mechanism.

8. (Original) The apparatus of claim 2 further comprises an inspection window or a sample faucet 12 on said outlet 11.

9. (Original) The apparatus of claim 2 wherein ozone generation is suppressed by use of non-ozone germicidal lamps.

10. (Currently amended) The apparatus of claim 2 wherein an optional outlet filter unit 13 ~~includes a catalytic filter to convert ozone into oxygen when dealing with air~~.

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